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## Annex for BLE

Test Report No.: CTL2410122021-WF

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FCCID: 2ASC7BD200PRO

## 1. Duty Cycle

### 1.1 Test Result

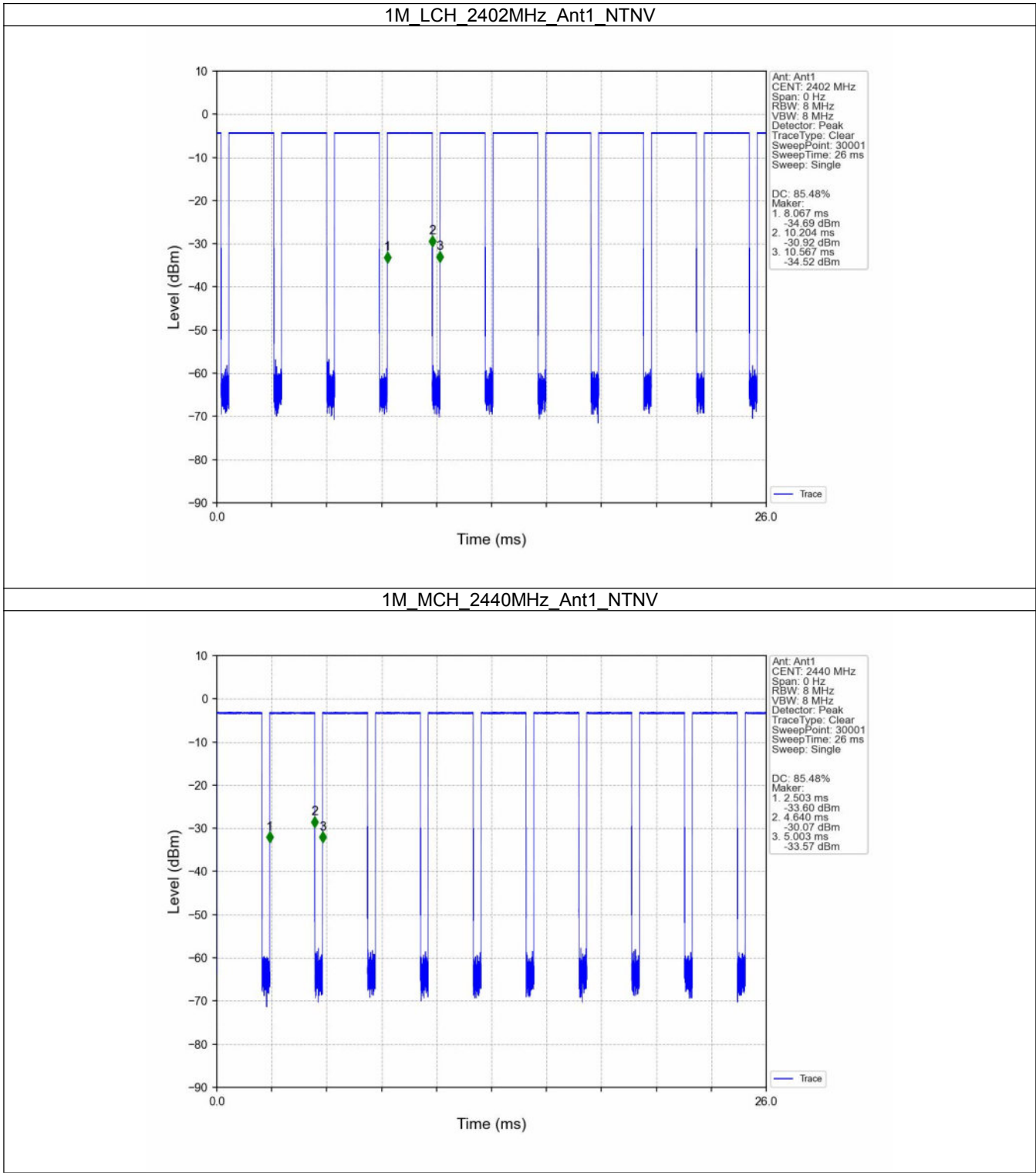
#### 1.1.1 Ant1

| Ant1 |         |                 |           |             |                |                                   |                       |
|------|---------|-----------------|-----------|-------------|----------------|-----------------------------------|-----------------------|
| Mode | TX Type | Frequency (MHz) | T_on (ms) | Period (ms) | Duty Cycle (%) | Duty Cycle Correction Factor (dB) | Max. DC Variation (%) |
| 1M   | SISO    | 2402            | 2.137     | 2.500       | 85.48          | 0.68                              | 0.03                  |
|      |         | 2440            | 2.137     | 2.500       | 85.48          | 0.68                              | 0.03                  |
|      |         | 2480            | 2.128     | 2.500       | 85.12          | 0.70                              | 0.03                  |
| 2M   | SISO    | 2402            | 1.085     | 2.500       | 43.40          | 3.63                              | 0.02                  |
|      |         | 2440            | 1.085     | 2.500       | 43.40          | 3.63                              | 0.02                  |
|      |         | 2480            | 1.085     | 2.499       | 43.42          | 3.62                              | 0.03                  |

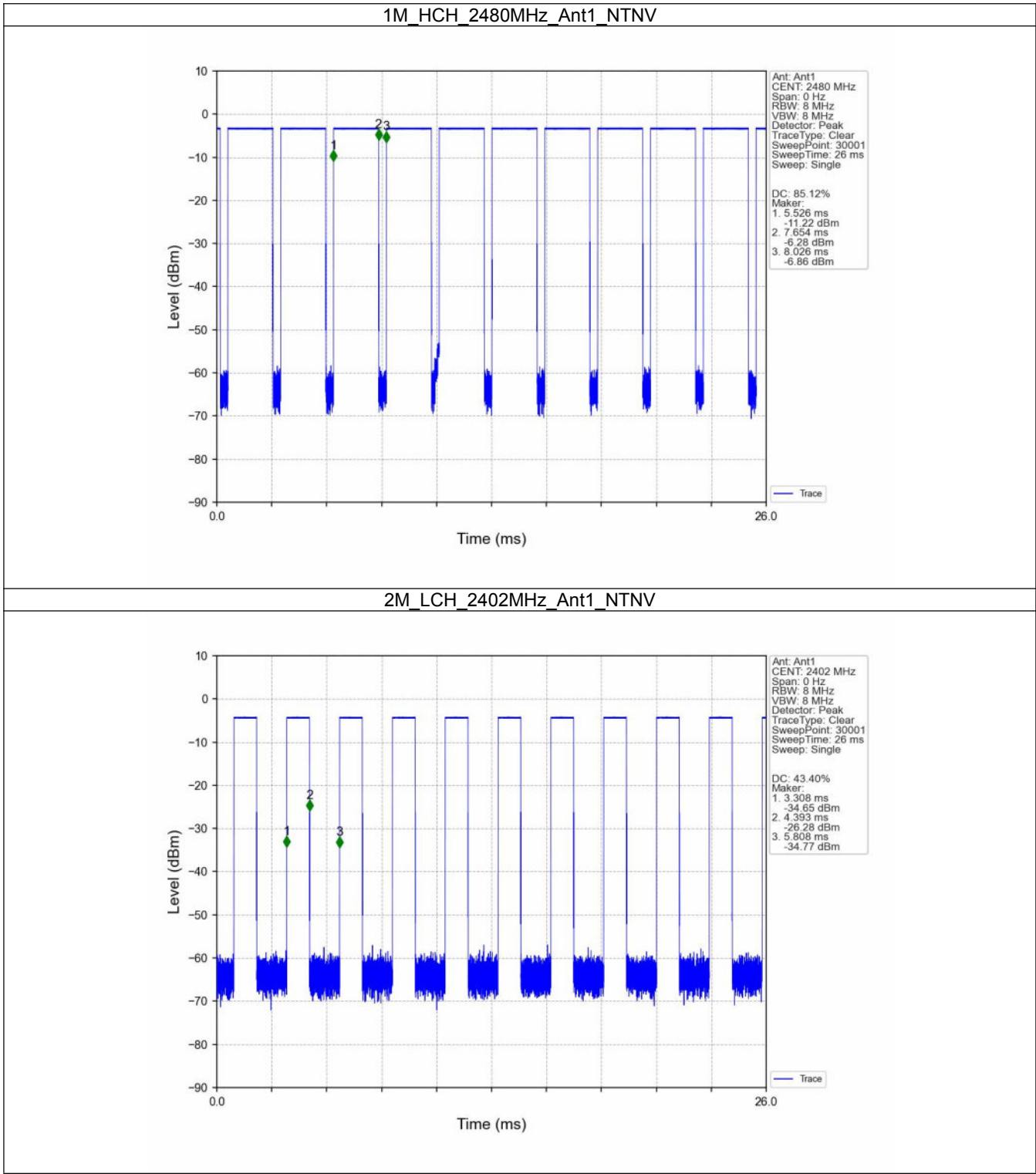
FCCID: 2ASC7BD200PRO

1.2 Test Graph

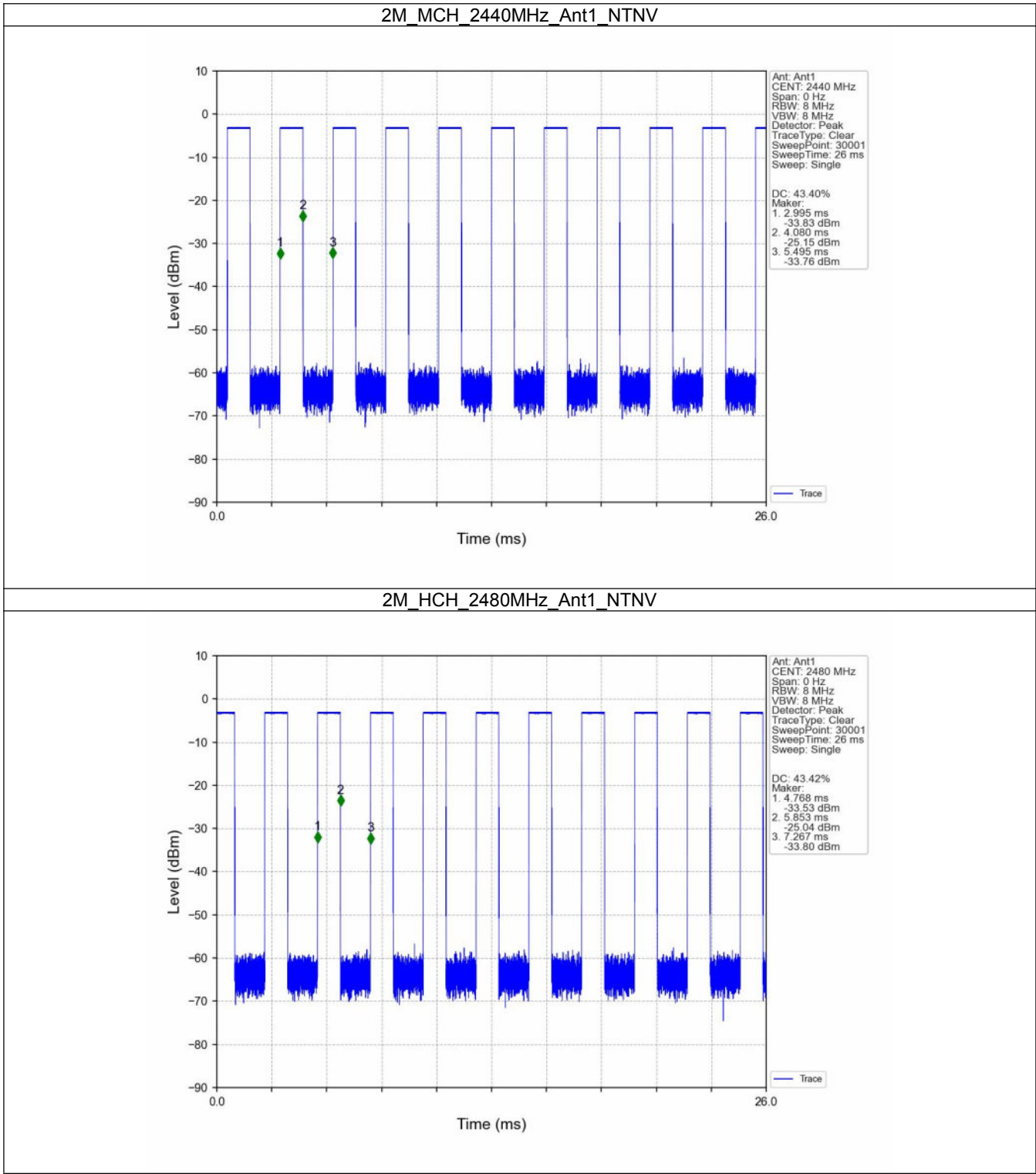
1.2.1 Ant1



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## 2. Bandwidth

### 2.1 Test Result

#### 2.1.1 OBW

| Mode | TX Type | Frequency (MHz) | ANT | 99% Occupied Bandwidth (MHz) |       | Verdict |
|------|---------|-----------------|-----|------------------------------|-------|---------|
|      |         |                 |     | Result                       | Limit |         |
| 1M   | SISO    | 2402            | 1   | 1.049                        | /     | Pass    |
|      |         | 2440            | 1   | 1.057                        | /     | Pass    |
|      |         | 2480            | 1   | 1.069                        | /     | Pass    |
| 2M   | SISO    | 2402            | 1   | 2.057                        | /     | Pass    |
|      |         | 2440            | 1   | 2.055                        | /     | Pass    |
|      |         | 2480            | 1   | 2.059                        | /     | Pass    |

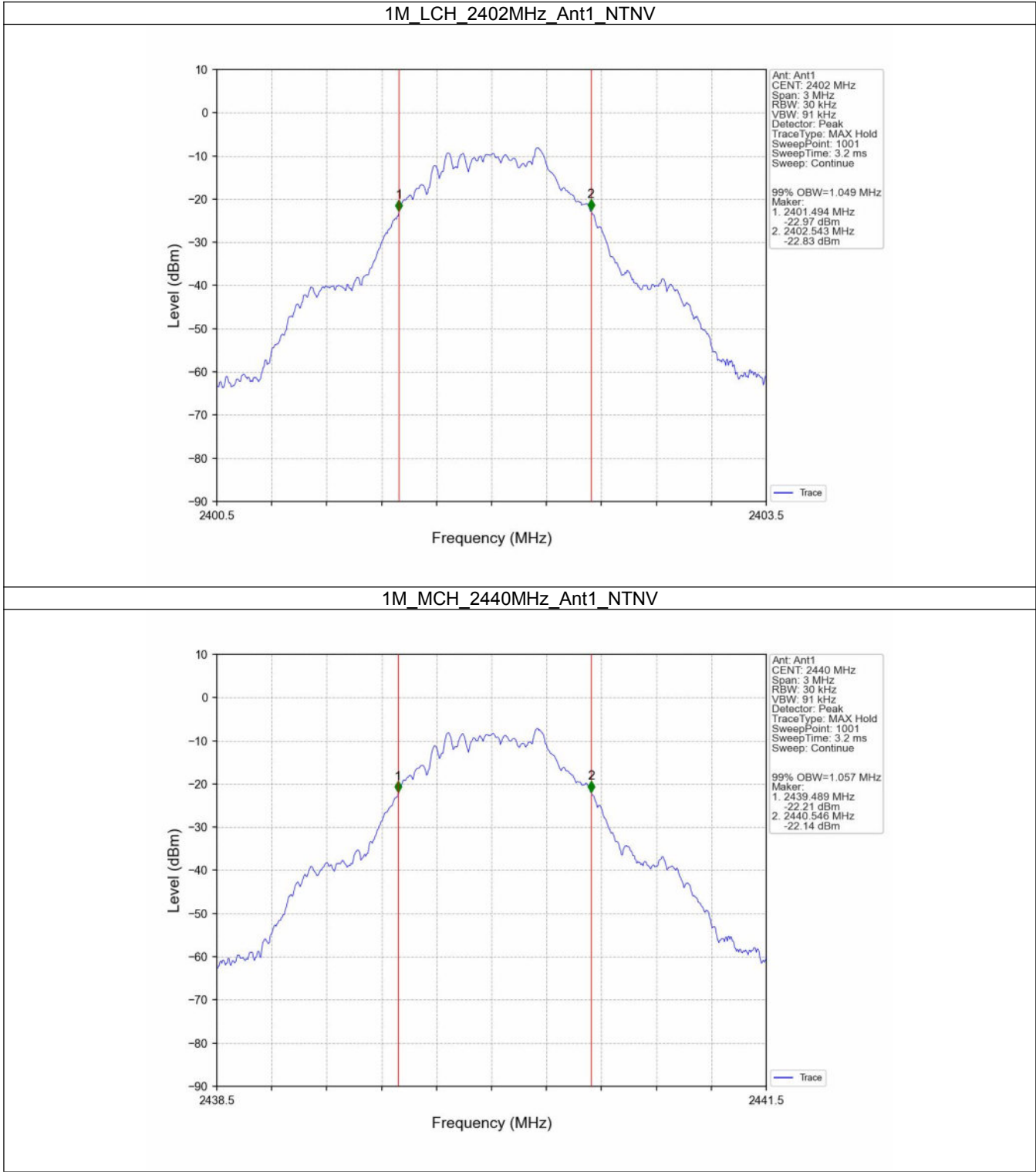
#### 2.1.2 6dB BW

| Mode | TX Type | Frequency (MHz) | ANT | 6dB Bandwidth (MHz) |            | Verdict |
|------|---------|-----------------|-----|---------------------|------------|---------|
|      |         |                 |     | Result              | Limit      |         |
| 1M   | SISO    | 2402            | 1   | 0.672               | $\geq 0.5$ | Pass    |
|      |         | 2440            | 1   | 0.679               | $\geq 0.5$ | Pass    |
|      |         | 2480            | 1   | 0.693               | $\geq 0.5$ | Pass    |
| 2M   | SISO    | 2402            | 1   | 1.185               | $\geq 0.5$ | Pass    |
|      |         | 2440            | 1   | 1.245               | $\geq 0.5$ | Pass    |
|      |         | 2480            | 1   | 1.242               | $\geq 0.5$ | Pass    |

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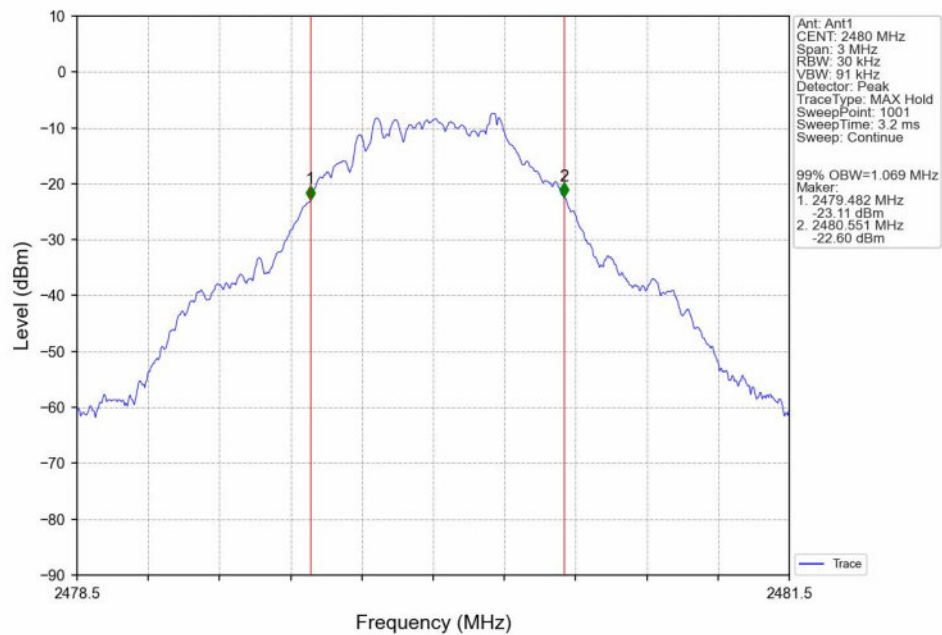
2.2 Test Graph

2.2.1 OBW

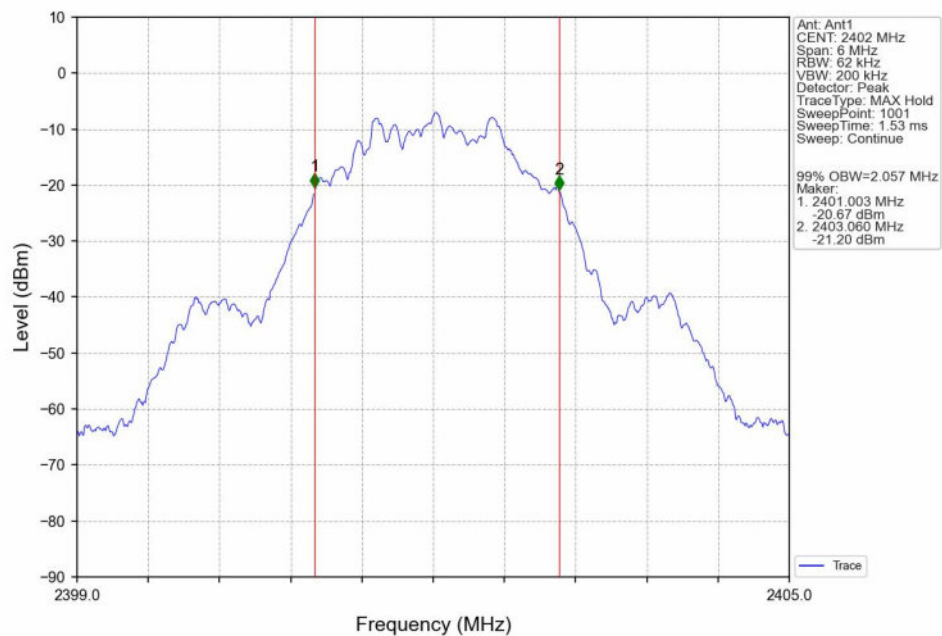


FCCID: 2ASC7BD200PRO

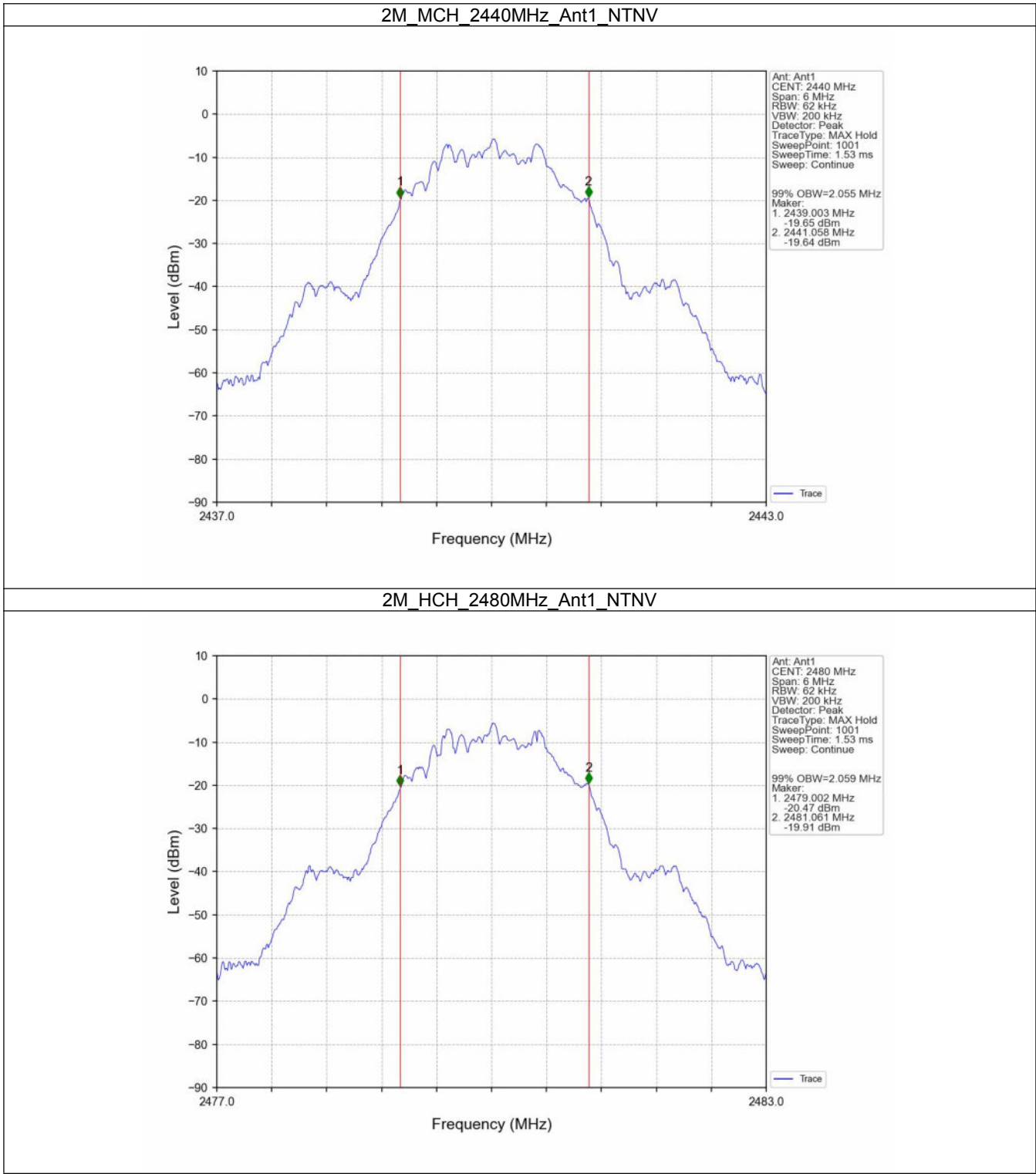
1M\_HCH\_2480MHz\_Ant1\_NTNV



2M\_LCH\_2402MHz\_Ant1\_NTNV

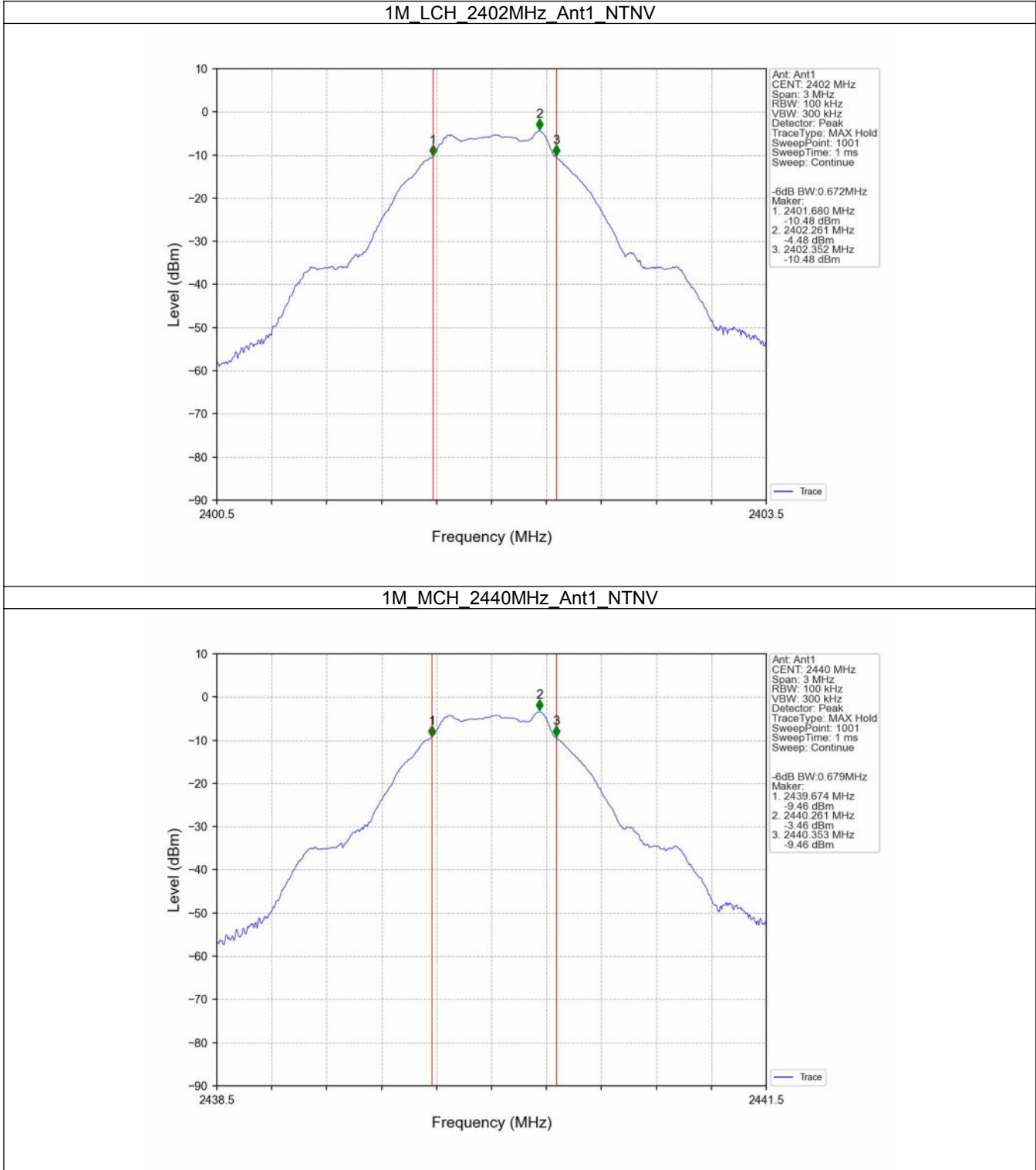


FCCID: 2ASC7BD200PRO

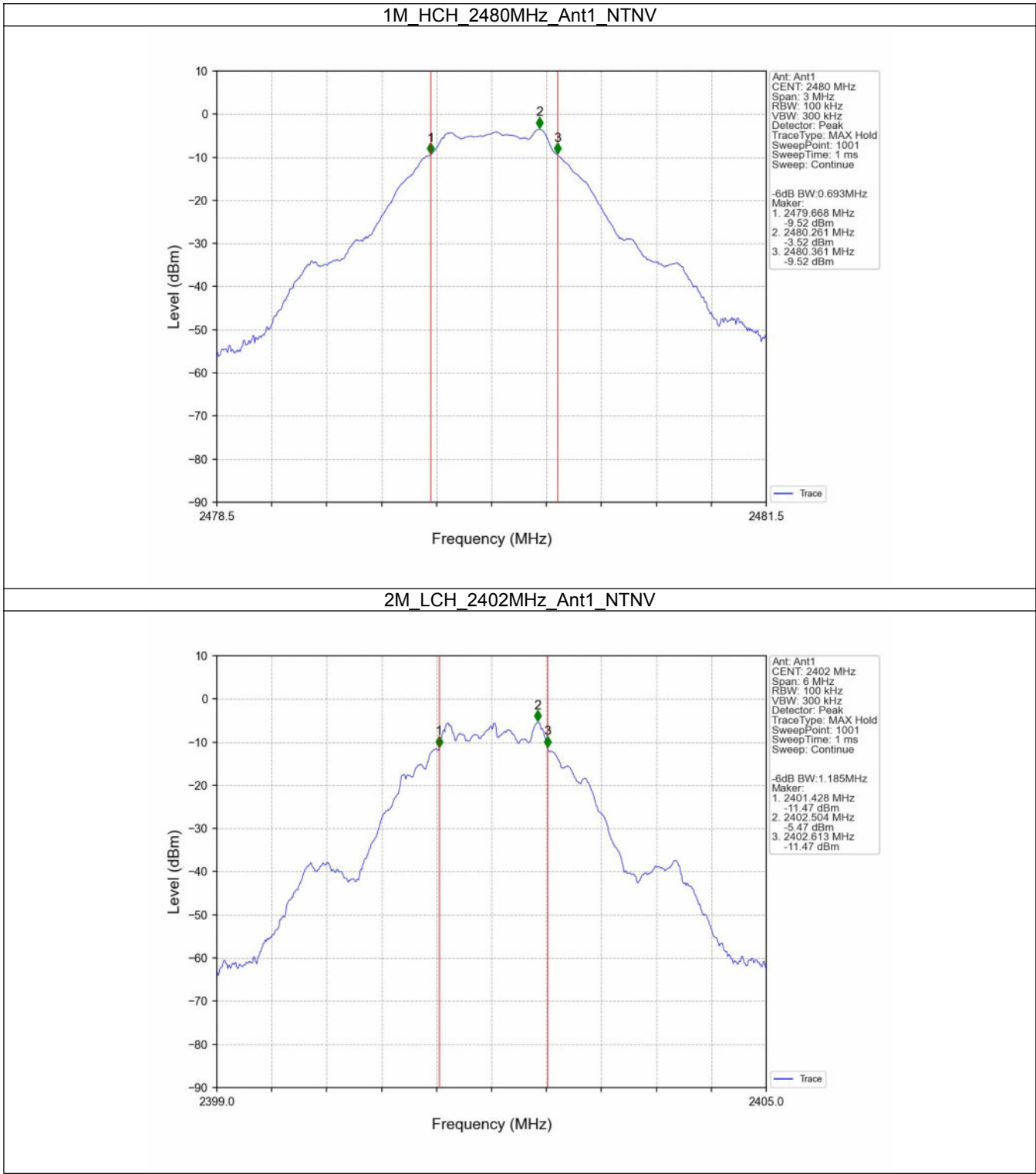


FCCID: 2ASC7BD200PRO

2.2.2 6dB BW

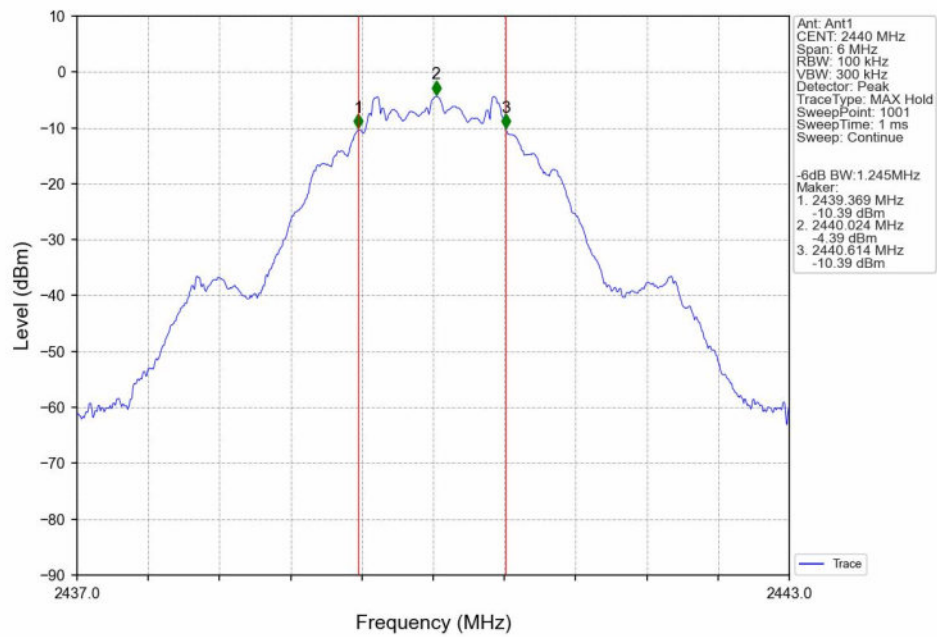


FCCID: 2ASC7BD200PRO

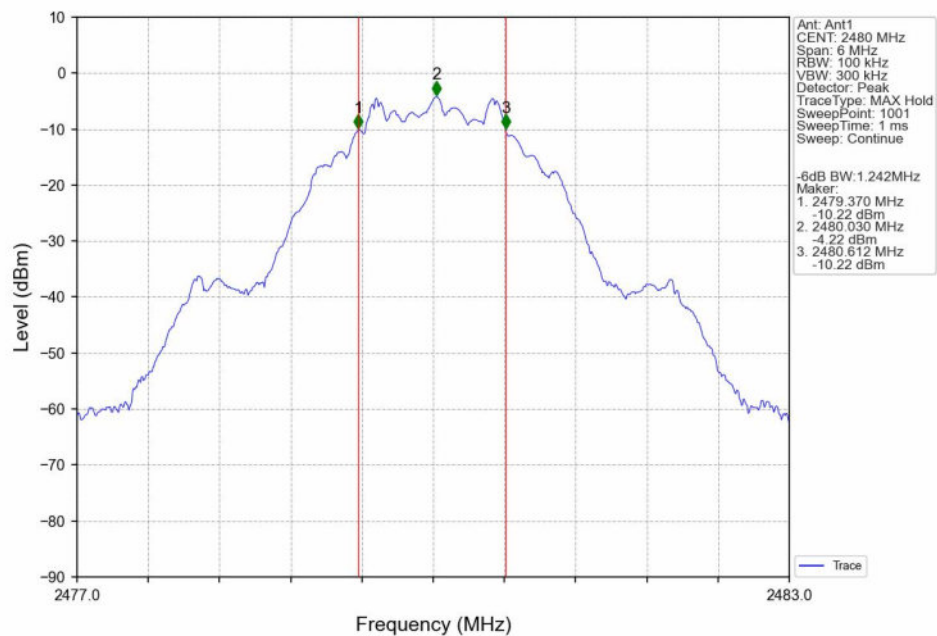


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2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV



FCCID: 2ASC7BD200PRO

### 3. Maximum Conducted Output Power

#### 3.1 Test Result

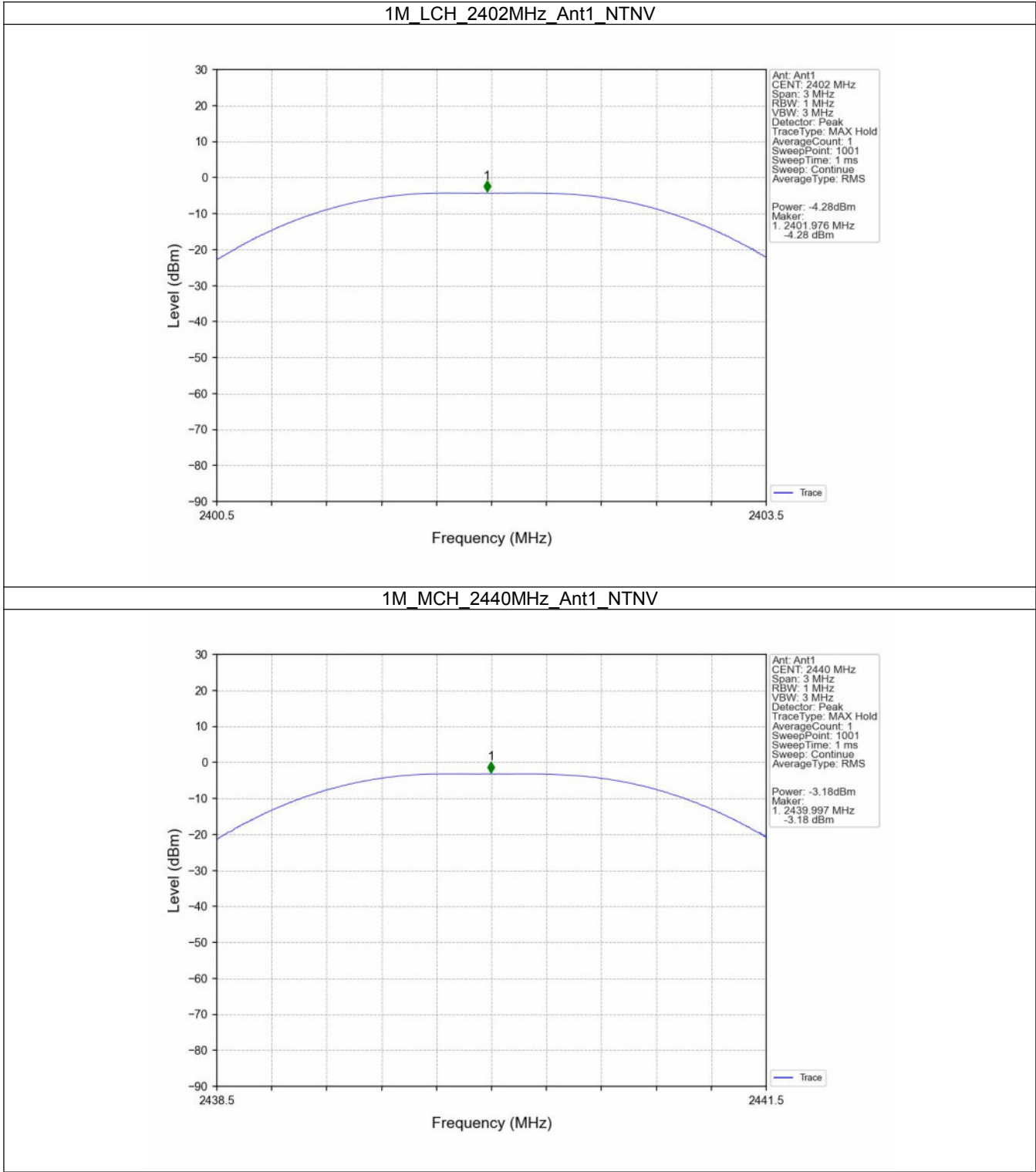
##### 3.1.1 Power

| Mode                                | TX Type | Frequency (MHz) | Maximum Peak Conducted Output Power (dBm) |       | Verdict |
|-------------------------------------|---------|-----------------|-------------------------------------------|-------|---------|
|                                     |         |                 | ANT1                                      | Limit |         |
| 1M                                  | SISO    | 2402            | -4.28                                     | <=30  | Pass    |
|                                     |         | 2440            | -3.18                                     | <=30  | Pass    |
|                                     |         | 2480            | -3.20                                     | <=30  | Pass    |
| 2M                                  | SISO    | 2402            | -4.26                                     | <=30  | Pass    |
|                                     |         | 2440            | -3.13                                     | <=30  | Pass    |
|                                     |         | 2480            | -3.15                                     | <=30  | Pass    |
| Note1: Antenna Gain: Ant1: 1.74dBi; |         |                 |                                           |       |         |

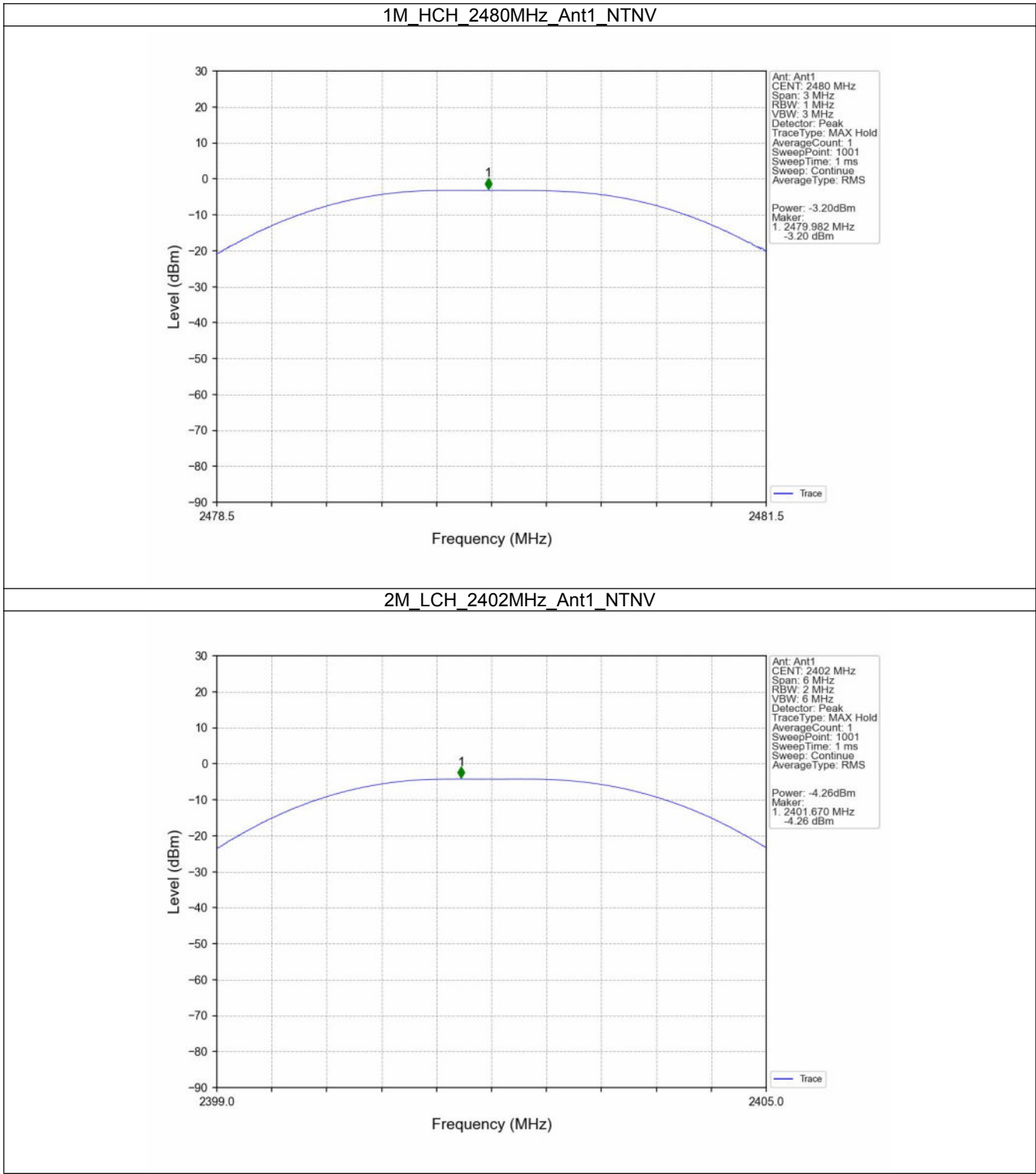
FCCID: 2ASC7BD200PRO

3.2 Test Graph

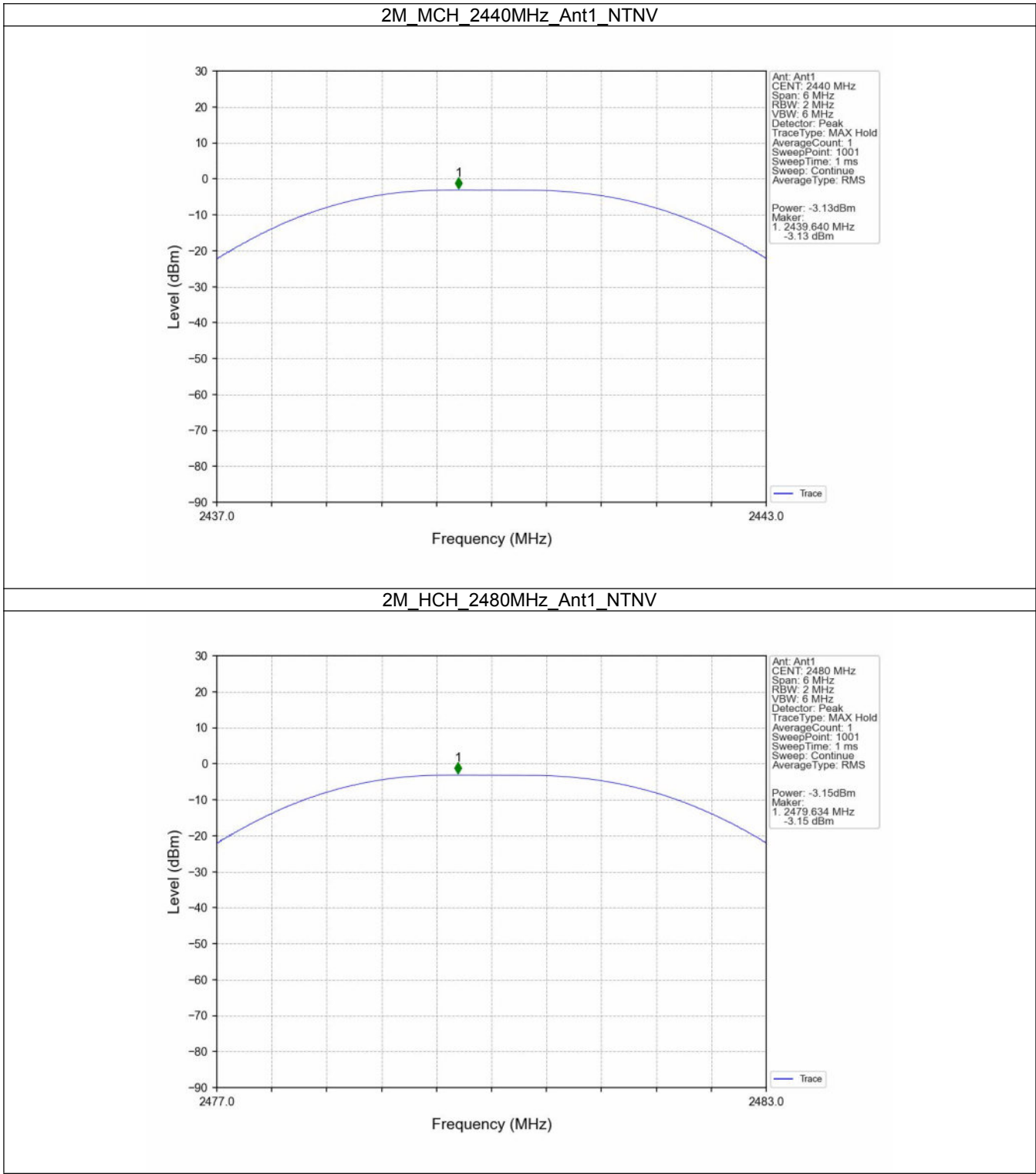
3.2.1 Power



FCCID: 2ASC7BD200PRO



FCCID: 2ASC7BD200PRO



FCCID: 2ASC7BD200PRO

## 4. Maximum Power Spectral Density

### 4.1 Test Result

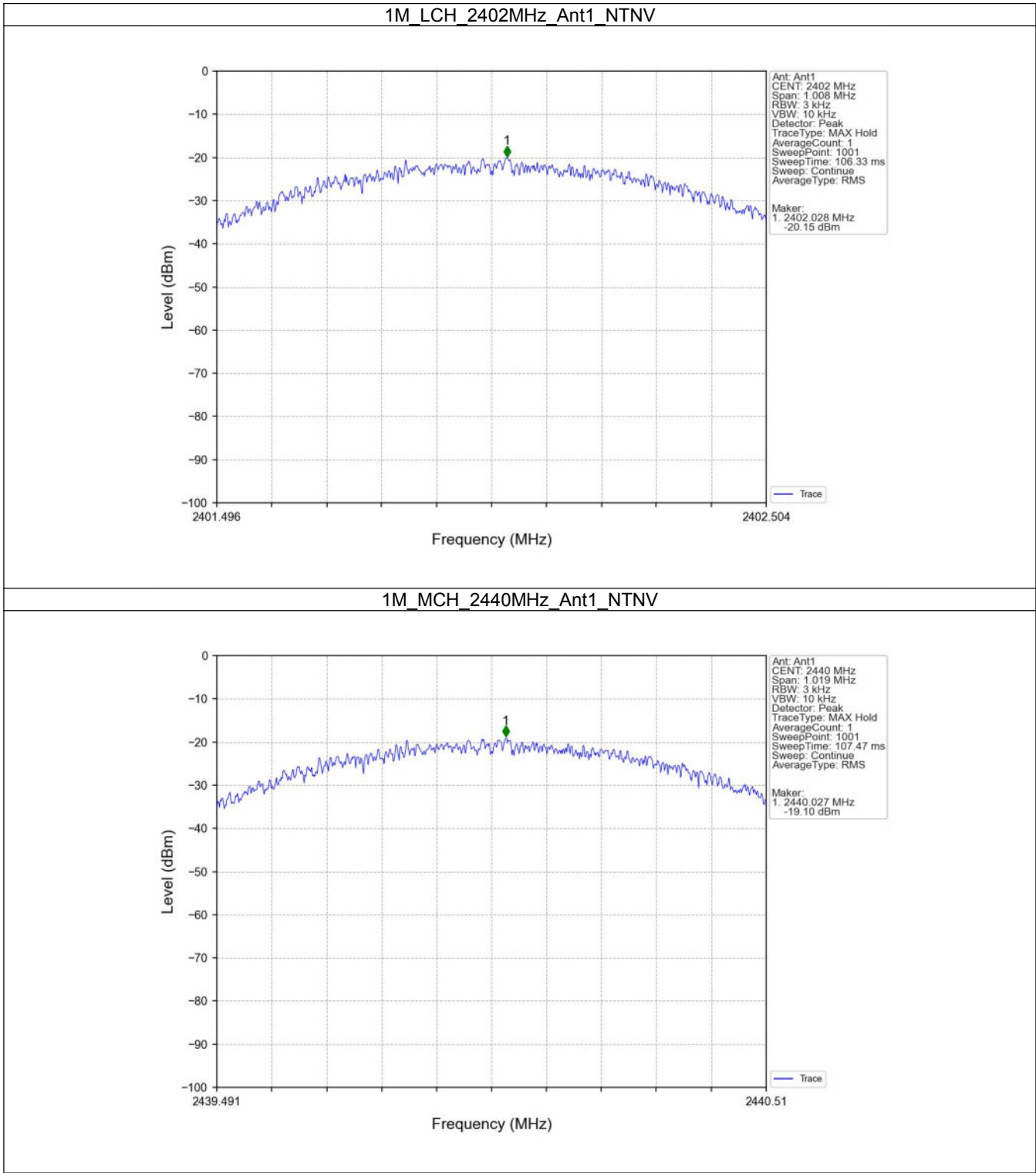
#### 4.1.1 PSD

| Mode                                | TX Type | Frequency (MHz) | Maximum PSD (dBm/3kHz) |       | Verdict |
|-------------------------------------|---------|-----------------|------------------------|-------|---------|
|                                     |         |                 | ANT1                   | Limit |         |
| 1M                                  | SISO    | 2402            | -20.15                 | <=8   | Pass    |
|                                     |         | 2440            | -19.10                 | <=8   | Pass    |
|                                     |         | 2480            | -18.73                 | <=8   | Pass    |
| 2M                                  | SISO    | 2402            | -24.03                 | <=8   | Pass    |
|                                     |         | 2440            | -22.91                 | <=8   | Pass    |
|                                     |         | 2480            | -22.69                 | <=8   | Pass    |
| Note1: Antenna Gain: Ant1: 1.74dBi; |         |                 |                        |       |         |

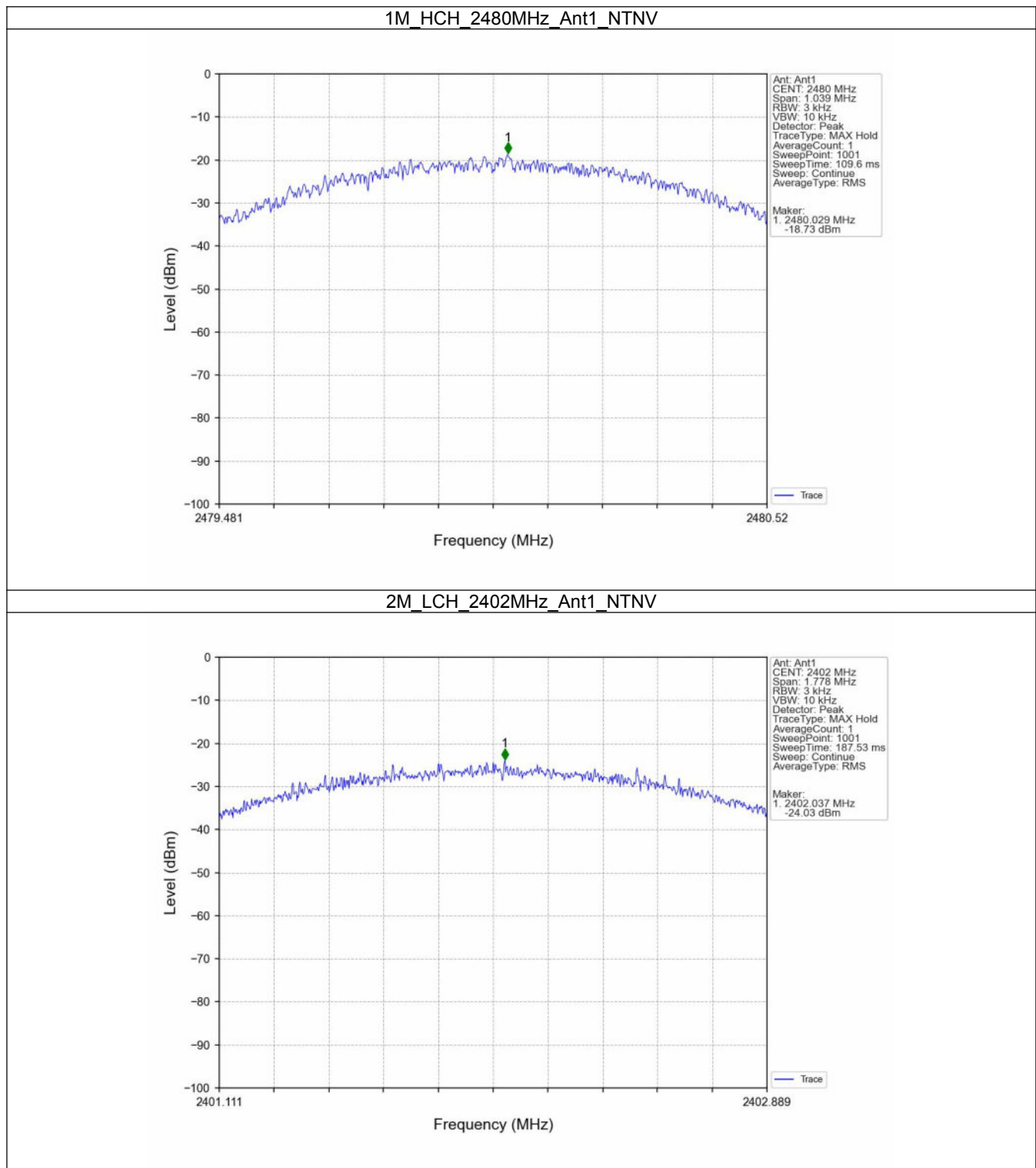
FCCID: 2ASC7BD200PRO

4.2 Test Graph

4.2.1 PSD

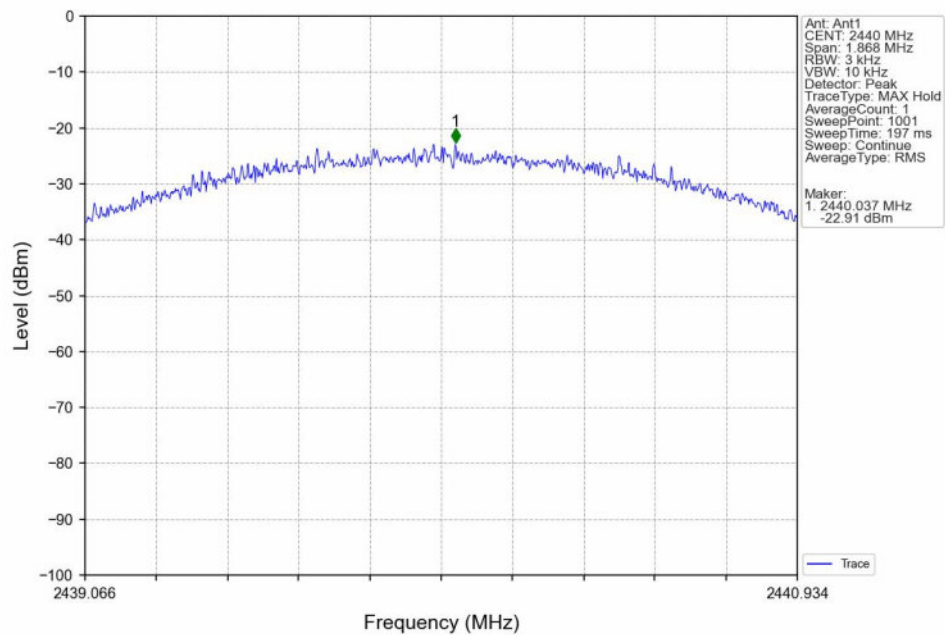


FCCID: 2ASC7BD200PRO

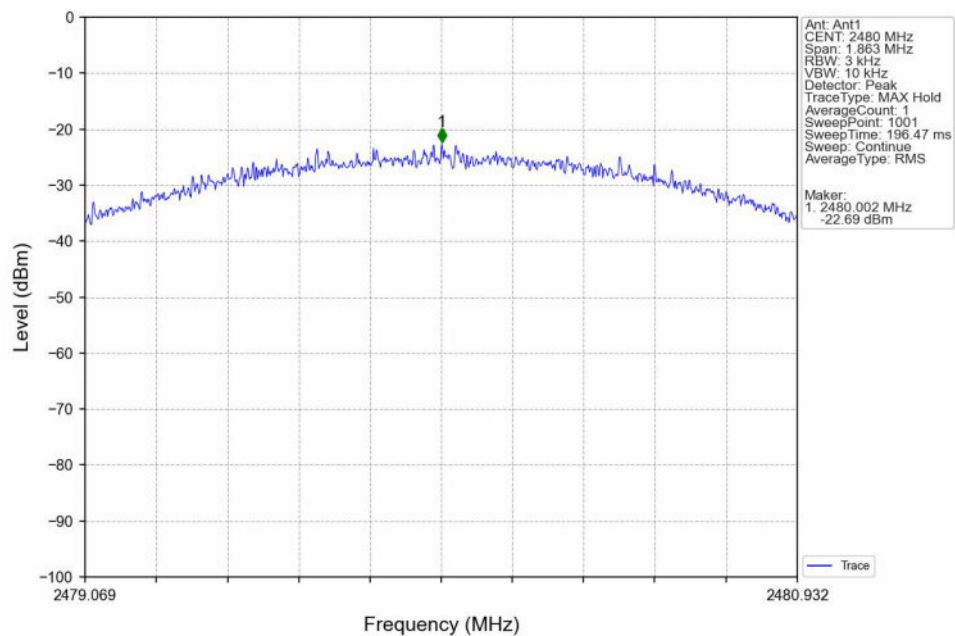


FCCID: 2ASC7BD200PRO

2M\_MCH\_2440MHz\_Ant1\_NTNV



2M\_HCH\_2480MHz\_Ant1\_NTNV



FCCID: 2ASC7BD200PRO

## 5. Unwanted Emissions In Non-restricted Frequency Bands

### 5.1 Test Result

#### 5.1.1 Ref

| Mode | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) |
|------|---------|-----------------|-----|--------------------------|
| 1M   | SISO    | 2402            | 1   | -4.50                    |
|      |         | 2440            | 1   | -3.45                    |
|      |         | 2480            | 1   | -3.53                    |
| 2M   | SISO    | 2402            | 1   | -5.40                    |
|      |         | 2440            | 1   | -4.26                    |
|      |         | 2480            | 1   | -4.23                    |

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

#### 5.1.2 CSE

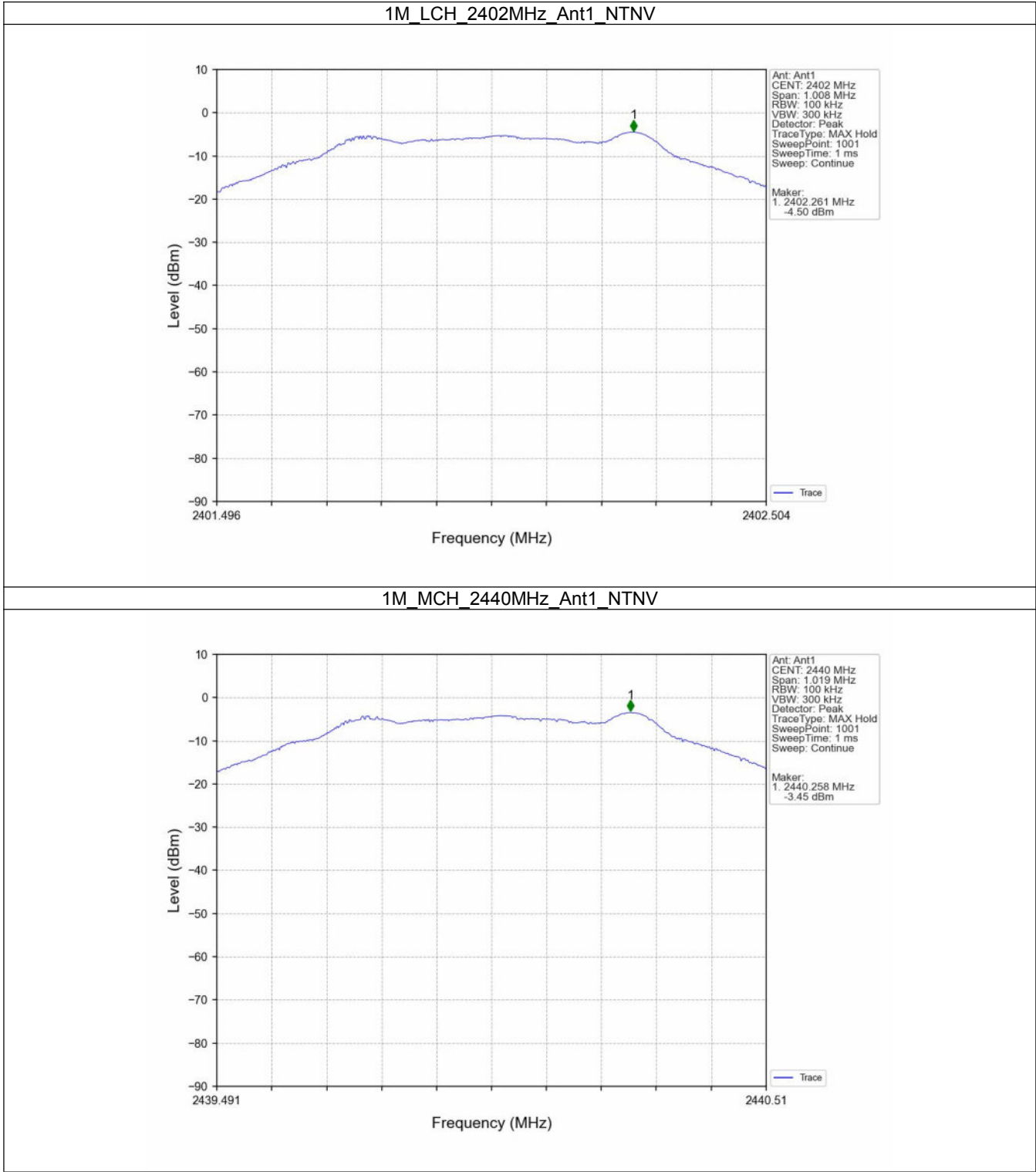
| Mode | TX Type | Frequency (MHz) | ANT | Level of Reference (dBm) | Limit (dBm) | Verdict |
|------|---------|-----------------|-----|--------------------------|-------------|---------|
| 1M   | SISO    | 2402            | 1   | -3.45                    | -23.45      | Pass    |
|      |         | 2440            | 1   | -3.45                    | -23.45      | Pass    |
|      |         | 2480            | 1   | -3.45                    | -23.45      | Pass    |
| 2M   | SISO    | 2402            | 1   | -4.23                    | -24.23      | Pass    |
|      |         | 2440            | 1   | -4.23                    | -24.23      | Pass    |
|      |         | 2480            | 1   | -4.23                    | -24.23      | Pass    |

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

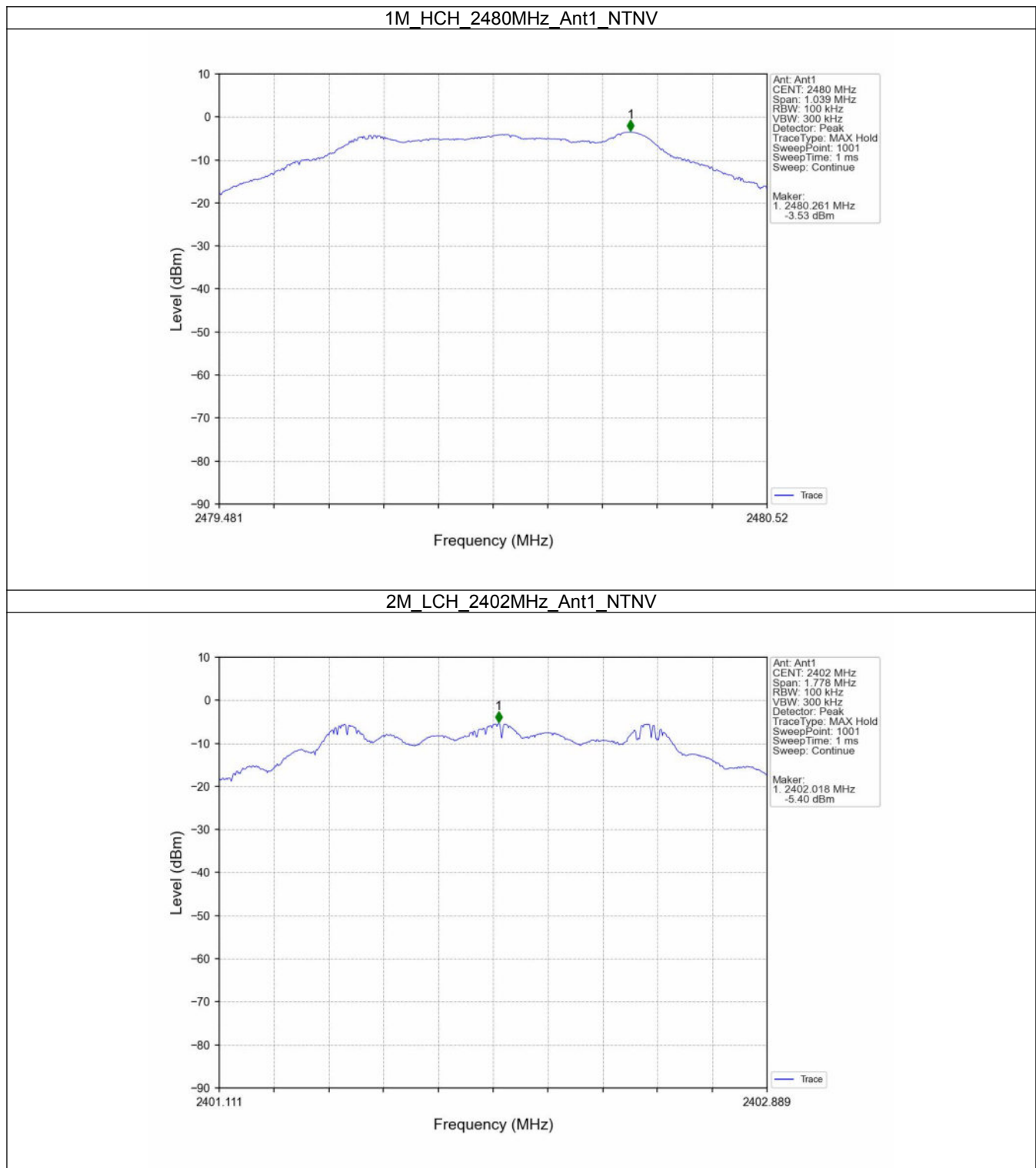
FCCID: 2ASC7BD200PRO

5.2 Test Graph

5.2.1 Ref

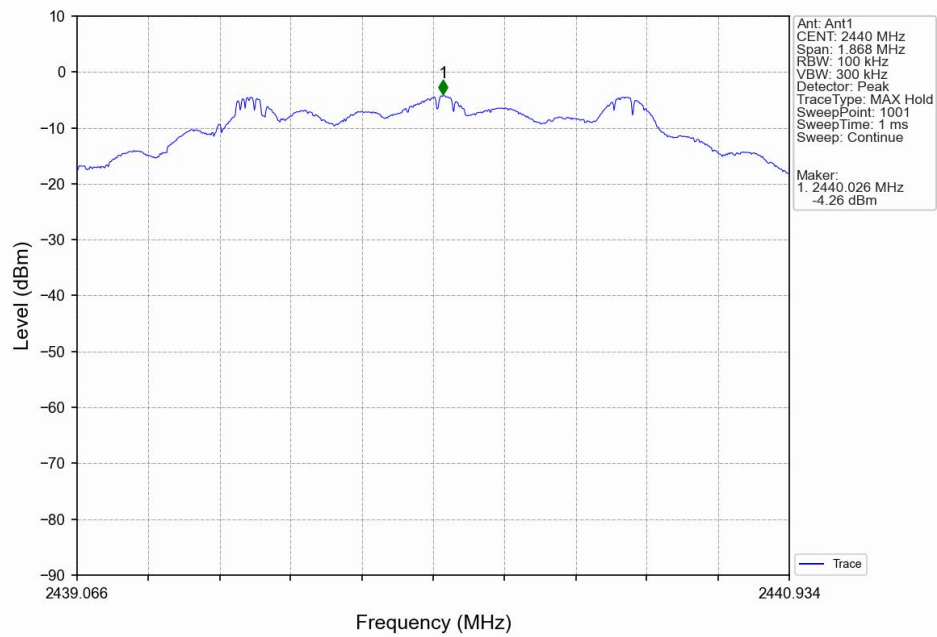


FCCID: 2ASC7BD200PRO

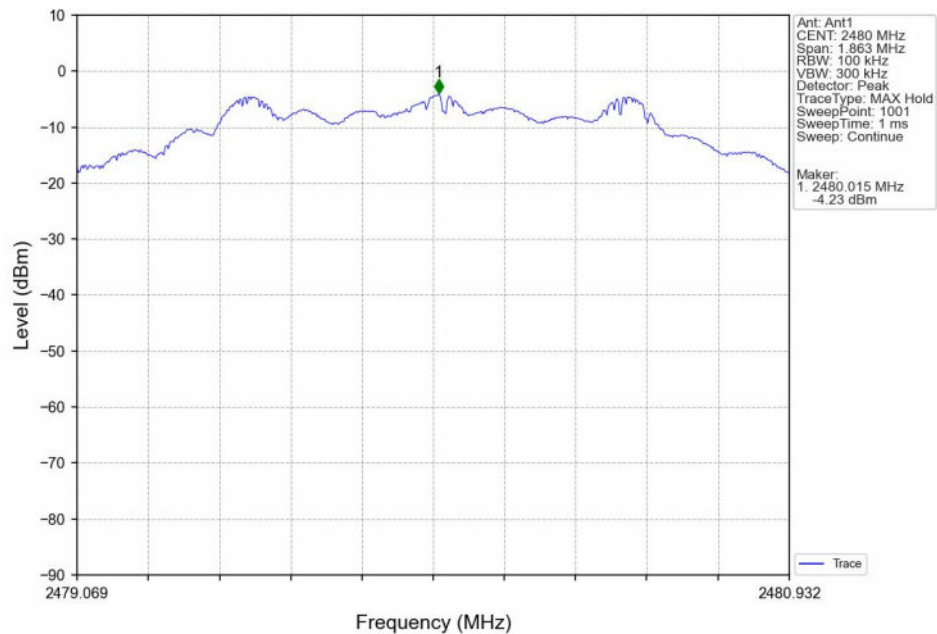


FCCID: 2ASC7BD200PRO

2M\_MCH\_2440MHz\_Ant1\_NTNV

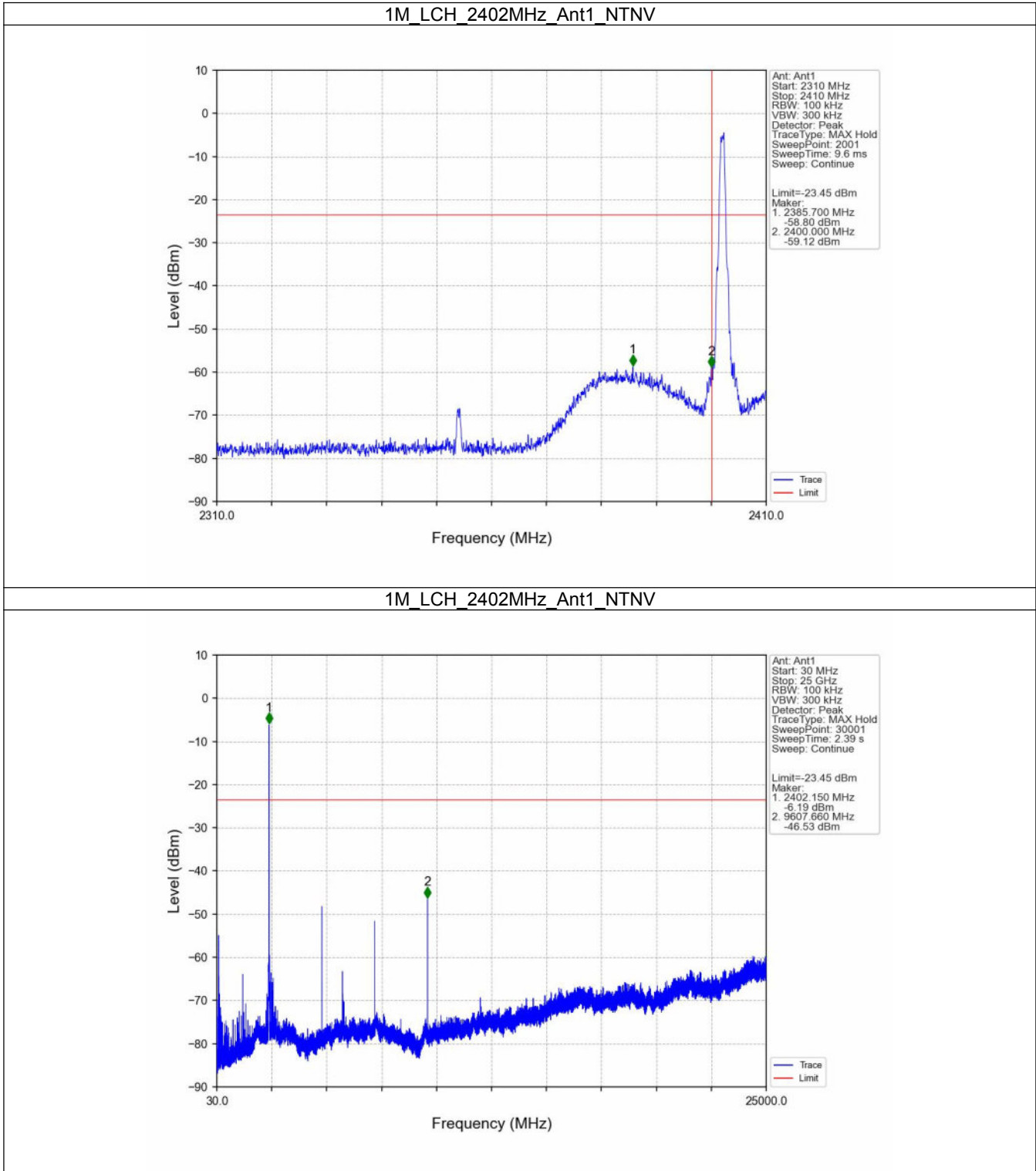


2M\_HCH\_2480MHz\_Ant1\_NTNV

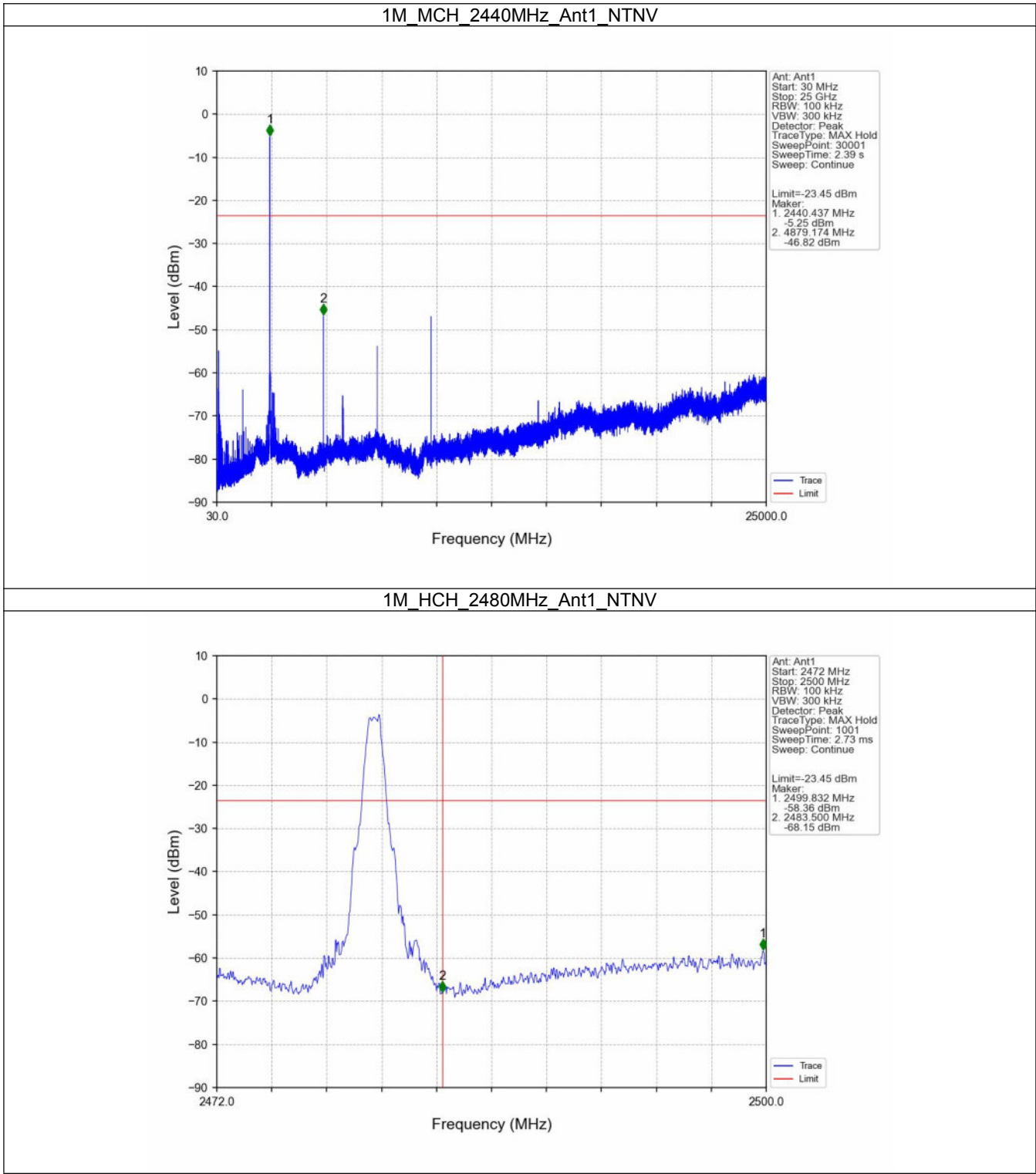


FCCID: 2ASC7BD200PRO

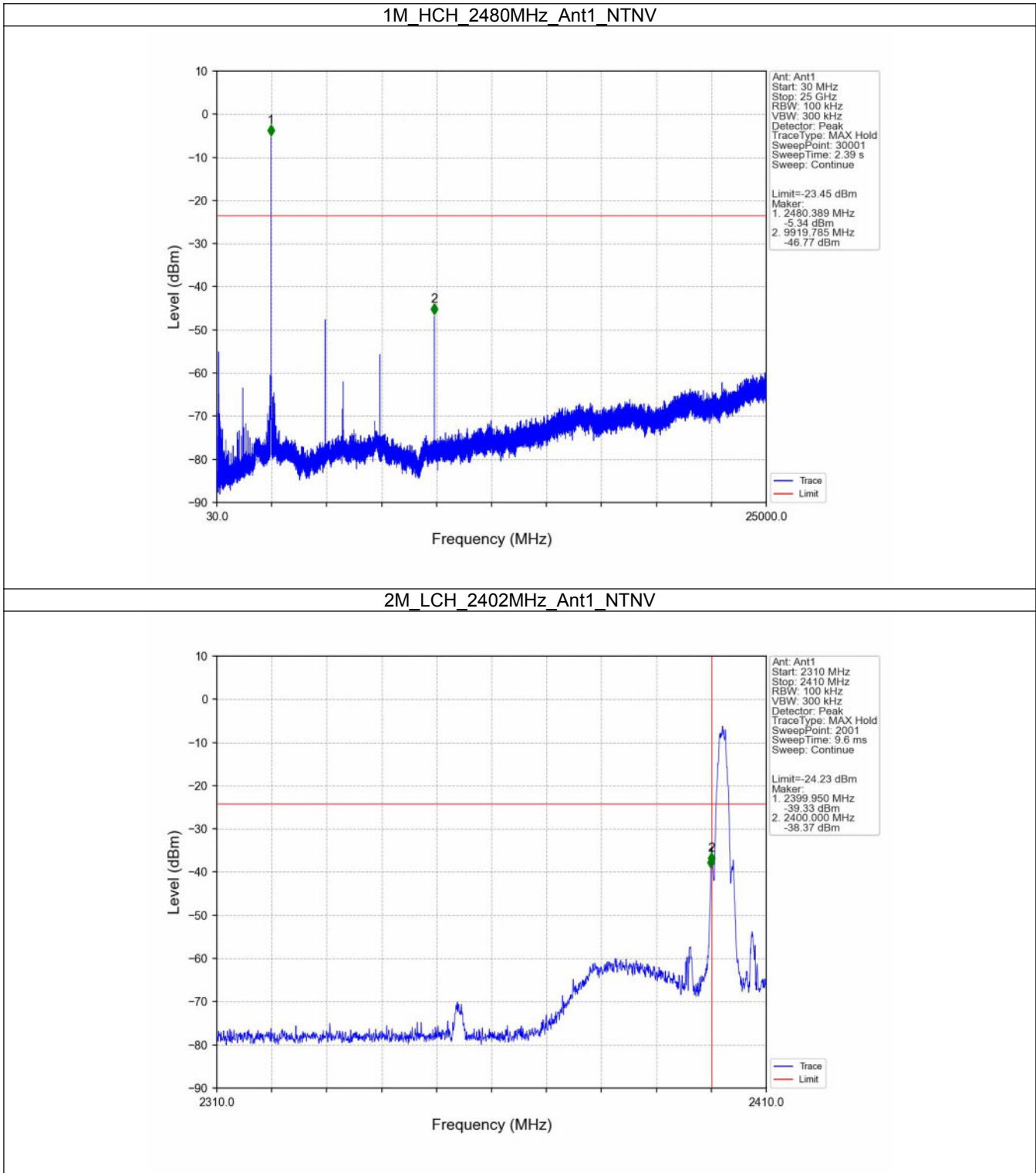
5.2.2 CSE



FCCID: 2ASC7BD200PRO

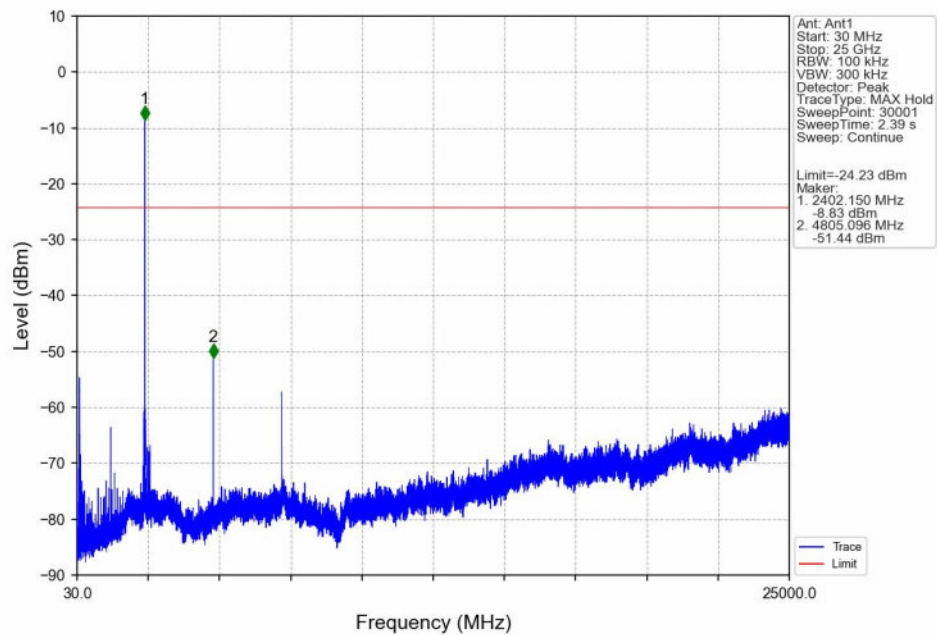


FCCID: 2ASC7BD200PRO

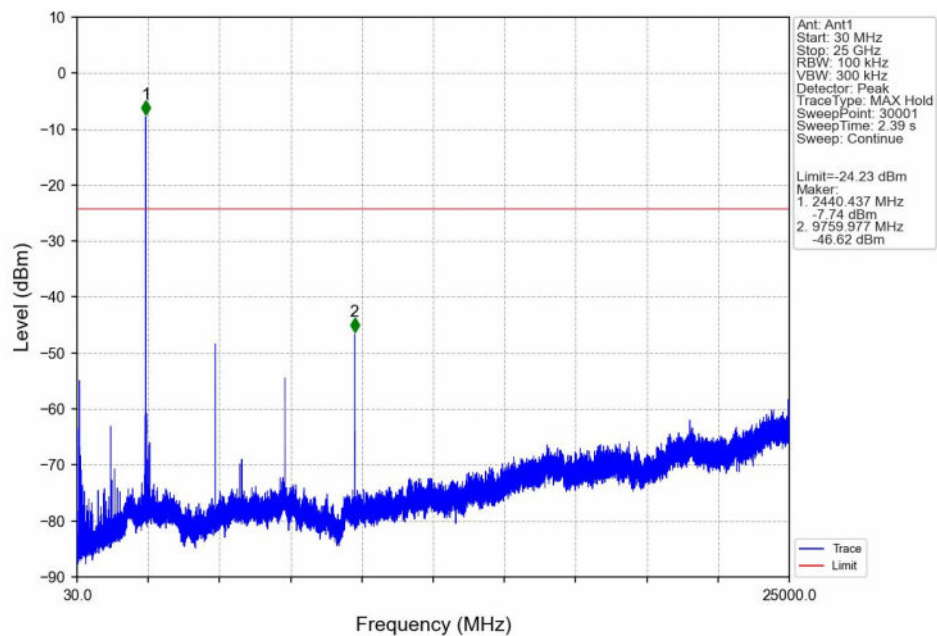


FCCID: 2ASC7BD200PRO

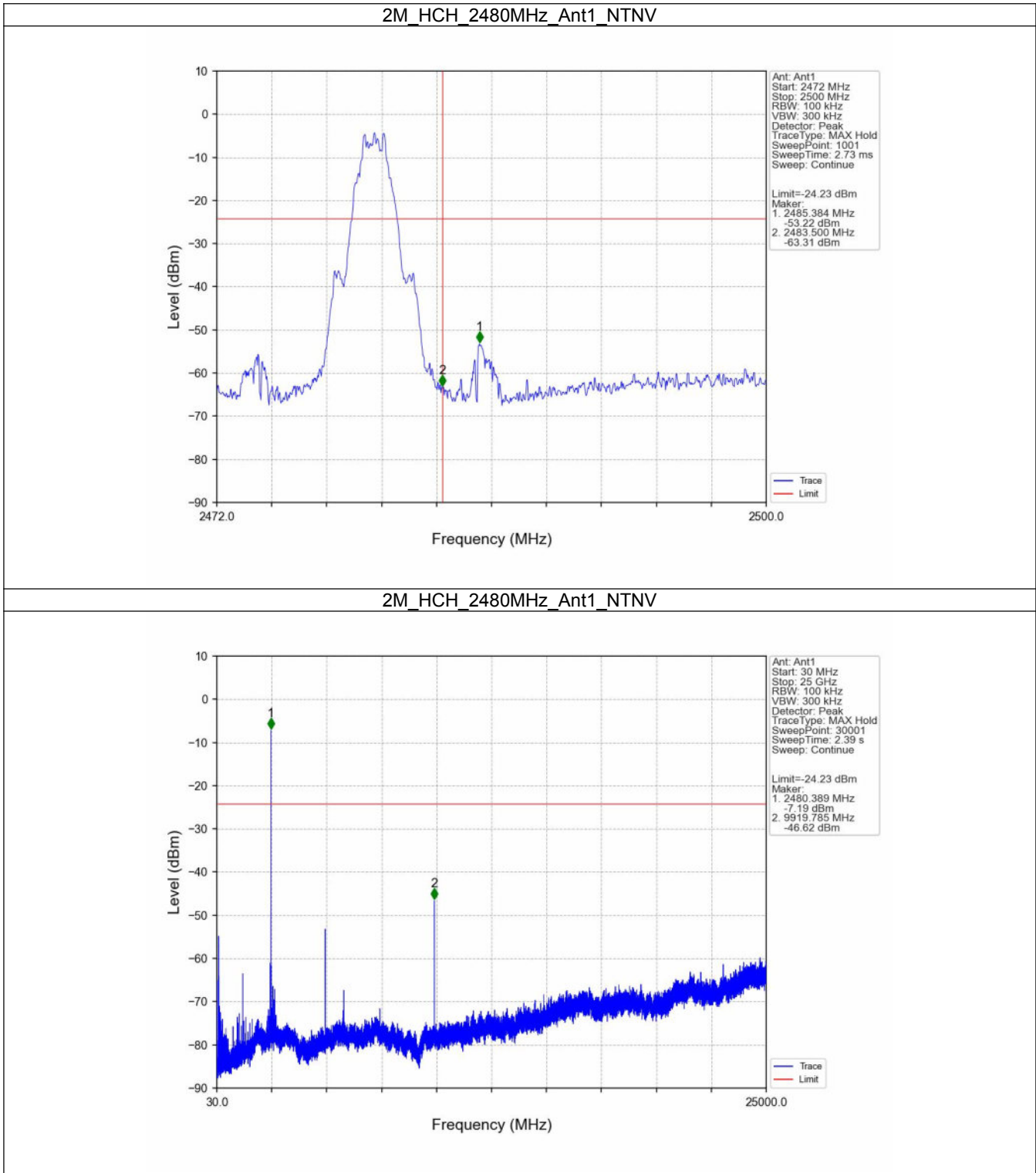
2M\_LCH\_2402MHz\_Ant1\_NTNV



2M\_MCH\_2440MHz\_Ant1\_NTNV



FCCID: 2ASC7BD200PRO



FCCID: 2ASC7BD200PRO

## 6. Form731

### 6.1 Test Result

#### 6.1.1 Form731

| Lower Freq (MHz) | High Freq (MHz) | MAX Power (W) | MAX Power (dBm) |
|------------------|-----------------|---------------|-----------------|
| 2402             | 2480            | 0.0005        | -3.13           |